



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/492,787	01/28/2000	Kenji Funamoto	0879-0250P	1370

2292 7590 04/05/2004

BIRCH STEWART KOLASCH & BIRCH  
PO BOX 747  
FALLS CHURCH, VA 22040-0747

EXAMINER
----------

VILLECCO, JOHN M

ART UNIT	PAPER NUMBER
----------	--------------

2612

6

DATE MAILED: 04/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/492,787

Applicant(s)

FUNAMOTO, KENJI

Examiner

John M. Villecco

Art Unit

2612

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☒ Claim(s) 7 and 8 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION II

### *Response to Arguments*

1. Applicant's arguments filed February 5, 2004 have been fully considered but they are not persuasive.
2. Applicant argues that Tanaka fails to teach a relationship between the frequency of the drive clock for the CCD and the frequency of the timing signal. The examiner agrees with the applicant's assertion that Tanaka appears to show that the A/D converter is timed using the same signal as the drive pulse of the CCD. However, claim 1 merely states that A/D converter converts the image signal according to the drive clock. Even though signal being sent to the A/D converter is driven at the same frequency as the CCD it is still being operated according to the drive clock. In other words, the claim language does not require different clocking frequencies since the A/D converter is also being operated "according" to the drive clock.
3. Applicant has amended claims 1 and 6 to include the limitation that the image data is thinned out upon the input of the data into the signal processing part. However, the amendment is deemed not to place the claims into condition of allowance. More specifically, as for claim 1, while it is clear from the specification that the applicant is trying to claim that the thinning takes place in the signal processing part, it doesn't appear that the wording of the claim accurately describes this limitation. The newly amended claim language only indicates that the image data is thinned upon the input of the data into the signal processing part. Clearly, the image data in Tanaka would be thinned upon the input of the data into the signal processing part since the data

Art Unit: 2612

is already thinned prior to being input. Therefore the rejection from the previous office action will be repeated.

4. In order to cover the new limitation added in claim 6, a new grounds of rejection has been presented.

5. Applicant has added new claims 7 and 8, which clearly reflect the limitation of thinning the image data in the signal processing part.

***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. **Claims 1, 3, and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Tanaka et al. (U.S. Patent No. 6,130,420).**

8. Regarding **claim 1**, Tanaka discloses a frequency divider (23) for dividing a frequency of a drive clock (22) of an imaging device (10), an A/D converter (103) for converting an image signal from the imager (10) according to the timing generating circuit (20) which includes the drive clock (22), and a signal processor (104) for processing the image data output from the A/D converter (103). See Figures 1 and 7. Furthermore, the signal processor (104) captures the images in synchronization with the frequency divided clock since the pixels are continually read to the signal processor (104) based on the output of the timing generator (20). Additionally,

Art Unit: 2612

Tanaka discloses in Figure 7, providing a signal to the camera signal processing circuit, thus controlling its timing. While it is clear from the specification that the applicant is trying to claim that the thinning takes place in the signal processing part, it doesn't appear that the wording of the claim accurately describes this limitation. The newly amended claim language only indicates that the image data is thinned upon the input of the data into the signal processing part. Clearly, the image data in Tanaka would be thinned upon the input of the data into the signal processing part since the data is already thinned prior to being input.

9. As for *claim 3*, in column 4, line 62, Tanaka discloses that frequency is divided by a factor of  $m$ , where  $m$  is a natural number. It is well known in the art the natural numbers include odd numbers.

10. With regard to *claim 5*, Tanaka discloses an LCD (107) for displaying the image output from the signal processor (104).

### ***Claim Rejections - 35 USC § 103***

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. **Claims 2 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al. (U.S. Patent No. 6,130,420).**

13. Regarding *claim 2*, as mentioned above in the discussion of claim 1, Tanaka discloses all of the limitation of the parent claim. However Tanaka fails to explicitly state that the pixels of

Art Unit: 2612

the CCD are arranged in a G-stripe or Bayer arrangement. However, Official Notice is taken as to the fact that it is well known in the art to use a G-stripe or Bayer arrangement on a color imaging device. It is well known that these types of filter arrangement provide for excellent color reproducibility. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a G-stripe or Bayer filter arrangement in the imager of Tanaka so that excellent color reproducibility is attained.

14. As for *claim 4*, in column 4, line 62, Tanaka discloses that frequency is divided by a factor of  $m$ , where  $m$  is a natural number. It is well known in the art the natural numbers include odd numbers.

15. **Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sakai (U.S. Patent No. 5,206,730) and further in view of Tanaka et al. (U.S. Patent No. 6,130,420).**

16. With regard to *claim 6*, Sakai discloses a CCD sensor (2), a timing generator (1) that generates a drive clock for the CCD sensor, a frequency divider (8) that divides a frequency of the drive clock (1), an A/D converter (3) which operates according to the drive clock (1), a selection device (9) that outputs one of the drive signal of the frequency divided clock signal, a signal processor (5) for processing image data from the A/D converter that operates in synchronization with the one of the drive clock or the frequency divided clock signal, and a memory (7) that records image data output from the image processor (5). The system also includes a release switch (12) for starting a photographing operation.

Sakai, however, fails to explicitly state that the image data is thinned out upon input of the data into the signal processing part. Tanaka, on the other hand, discloses that it is well

Art Unit: 2612

known in the art to thin image data upon the input of the data to a signal processing section.

Tanaka discloses a frequency divider (23) for dividing a frequency of a drive clock (22) of an imaging device (10), an A/D converter (103) for converting an image signal from the imager (10) according to the timing generating circuit (20) which includes the drive clock (22), and a signal processor (104) for processing the image data output from the A/D converter (103). See Figures 1 and 7. This arrangement is used for thinning data before being sent to the signal processing section (104). By thinning the image data, the image can be read out faster, with less power, and in a proper format for previewing. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to thin the image data upon the input of the data into the signal processing part. Additionally Tanaka discloses an LCD (107) for displaying an image processed by the signal processing part (104).

#### *Allowable Subject Matter*

17. Claims 7 and 8 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter:

Regarding claims 7 and 8, the primary reason for indication of allowable subject matter is that the prior art fails to teach or reasonably suggest dividing the horizontal drive pulse and supplying the divided horizontal drive pulse to the signal processing part in order to thin the image data.

Art Unit: 2612

19. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any response to this final action should be mailed to:

Box AF  
Commissioner of Patents and Trademarks  
Washington, D.C. 20231

or faxed to:

(703) 308-6306, (for formal communications; please mark "**EXPEDITED PROCEDURE**"; for informal or draft communications, please label "**PROPOSED**" or "**DRAFT**")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA., Sixth Floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Villecco whose telephone number is (703) 305-1460. The examiner can normally be reached on Monday-Thursday.



Art Unit: 2612

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on (703) 305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



John M. Villecco  
3/29/04



NGOC-YEN VU  
PRIMARY EXAMINER